Zheyuan (Charles) Xu

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Education

University of Washington
MS in Computer Science — *Sep 2020 - Dec 2021*

Georgia Institute of Technology
BS in Computer Science and Electrical Engineering (intelligence and theory thread) — *Aug 2015 – May 2020*

Technical Skills

Languages: Python, C++ (11 or above), C#, SQL, JavaScript, Swift, Java, Matlab, HTML
Frameworks: Cuda, ROS2/ROS, Linux, Flutter, Flask, RabbitMQ, Docker, Git, CI/CD

Experience

ADAS/AD Stack Software Engineer — Jan 2022 – present
U Power Robotics — *Sunnyvale, CA*

- Setup simulation pipeline based on open source simulator, enabled verification of lane detection network and planning stacks
- Developed and maintained CUDA-based point cloud preprocessing package, reduced pipeline latency by more than 10 times
- Developed and maintained ROS2 driver package for Continental Radars and point cloud segmentation package for perception stack, enabled close-range obstacle detection (verified on recorded vehicle data)
- Developed multi-threaded ROS2 mission management package for urban autonomy demo, enabled visualization of high-level mission command and vehicle status

Machine Learning Intern — Oct 2021 – Dec 2021
Mavenir Systems Inc. — *Richardson, TX*

- Worked on factory robotics project, developed a YOLO-based ROS package for water bottle detection and motion planning of affordable robotic arms, achieved more than 60% success rate

Machine Learning Intern — June 2021 – Sep 2021
RATLab LLC (Startup) — *Seattle, WA*

- Developed neural network based algorithms for the consumer electronic product with Pytorch in Python, deployed on ARM-based microcontroller with Tensorflow Lite, achieved more than 85% classification accuracy in breathing detection

Research Assistant — Jan 2020 – Aug 2020
GTSR Lab — *Atlanta, GA*

- Designed the ultra-compact mechatronics system for GT-MAB 2.0 in Solidworks and Eagle CAD
- Optimized the firmware, reduced communication latency by more than 150 times with embedded C
- Co-invented two patents, co-authored paper was awarded "Best Student Paper Award" in AIM 2021

Selected Projects

GAIA System | *A 3D web app for monitoring natural disasters* — Feb 2021–Apr 2021

- Developed the frontend by using Three.js, HTML and CSS, enabled visualization and rendering of weather information on the web by using GCP BigQuery, used RabbitMQ for low-latency delivery of data payload across backend servers

AdaEye | *A voice-controlled navigation app for visually impaired* — Feb 2021

- Designed the frontend in Swift, allowing voice-enabled login and registration
- Enabled voice control of camera gimbal with RabbitMQ on Azure VM
- Built a chatbot on the frontend, enabling voice query and answer by OpenAI API and AVFoundation
- Awarded Best Use of Google Cloud in MakeHarvard 2021

Neomap | *An iOS mixed-reality app for share your new year resolution and relive your older memories* — Dec 2020

- Implemented gesture comment feature to user posts by integrating CoreML gesture detection and ARkit in Swift
- Awarded Best Use of Google Cloud and Radar.io Most Creative Award in MLH New Year New Hack 2021